

REMARKS

The WO 01/58411 A2 Reference

The Examiner rejected claims 1, 4, 7, and 13 under 35 U.S.C. 103(a) as being unpatentable over WO 01/58411 A2 published 16 August 2001. The Examiner contends that the reference teaches compounds that are homologous and have the same utility as that claimed. On page 54, the reference generically teaches C12-C15 alkyl benzoate compounds, and on page 57 isostearyl benzoate is taught. Applicant respectfully traverses this rejection.

WO 01/58411 A2 shows the use of benzoate esters in the formulation of antiperspirants. Specifically, the references shows the use of (a) C12-C15 Alkyl Benzoate (i.e., Finsolv® TN), (b) Octyldodecyl Benzoate (i.e., Finsolv® BOD), (c) a mixture of benzoate esters (i.e., Finsolv® TPP, a proprietary mixture from Finetex, Inc.) and (d) Isostearyl Benzoate (Finsolv® SB). All these benzoates esters, available from Finetex, Inc., the assignee of the present application, are shown as liquid or liquid mixtures for the dispersion of antiperspirant actives (such as aluminum chlorohydrates).

The above benzoate esters (a) through (d) identified in WO 01/58411 A2 are based on alkyl chains that are distinctly and patentably different than that of the esters of the invention. The benzoate esters (a) through (d) are based on C12-C15 alcohols of mixed ratios of linear and branched alkyl chains: 80% linear and 20% branched. In contrast, the esters of the present invention are derived from a different alkyl chain backbone that has defined monomethyl branching of C16 and C17 alcohols. The esters of the present invention have not been taught, nor are they suggested, in the prior art. Indeed, the raw material alcohols from which the esters of the invention are prepared, namely C16 - C17 alcohols (Neodol 67) used in the present invention, were not commercially available at the time of the WO 01/58411 A2 publication.

The esters of the invention, which are based upon branched monomethyl C16 - C17 alcohols (Neodol 67), have unexpected and non-obvious properties which are improved and unique as compared to known esters. Comparisons of the properties of the branched monomethyl C16-C17 alkyl benzoate of the invention vs. prior art esters are shown in the following table:

COMPARISON OF PROPERTIES

<u>Sunscreen</u>	<u>Finsolv G-2</u>	<u>Finsolv TN</u>	<u>Octanoate Ref. No. 130-67</u>	<u>Finester EH-25</u>	<u>Maleate Ref. No. 134-26</u>	<u>Finester LP</u>
Status:	Invention	Prior Art	Invention	Prior Art	Invention	Prior Art
Chemical Name:	C16-C17 alkyl benzoate	C12-C15 alkyl benzoate	C16-C17 octanoate	C12-C15 octanoate	C16-C17 alkyl maleate	C12-C15 alkyl maleate
Odor	odorless	mild/very mild	odorless	mild odor	odorless	mild odor
Color (APHA)	10	10	10	20	10	25
Freezing Point (°C)	-65	-5	-65	-20	-45	-15
Viscosity (CPS, 25°C)	60	30	60	27	80	135
Refractive Index @ 25°C	1.4850	1.4840	1.4500	1.4420	1.4620	1.4520
Surface Tension 25°C, dynes/cm	32	31.5	32.5	32	30.5	31.0
Spreading Coefficient	33.5	34.5	32.5	33	34.0	32.0

Remarks:

In comparing Finsolv G-2 (C16-C17 alkyl benzoate of the present invention) to Finsolv TN (C12-C15 alkyl benzoate of the prior art), the surface tension of Finsolv G-2 is within 0.5 units of the prior art, the spreading coefficient is within one unit of the prior art, the refractive index is higher than the prior art, the viscosity is higher than the prior art, and the freezing point is extremely lower

than that of the prior art.

In comparing Expt. 130-67 (the C16-C17 alkyl octanoate of the present invention) to Finester EH-25 (the C12-C15 alkyl octanoate of the prior art), the surface tension of the C16-C17 alkyl octanoate of the invention is within a half unit of the prior art, the spreading coefficient is within a half unit of the prior art, the refractive index is higher than the prior art, the viscosity is slightly higher than the prior art, and the freezing point is much lower than that of the prior art.

In comparing Expt. 134-26 (the C16-C17 alkyl maleate of the present invention) to Finester LP-25 (the C12-C15 alkyl maleate of the prior art), the surface tension of the C16-C17 alkyl maleate of the invention is within a half unit of the prior art, the spreading coefficient is within two units of the prior art, the refractive index is much higher than the prior art, the viscosity is distinctly lower than that of the prior art, and the freezing point is extremely low as compared to that of the prior art.

Thus, the improved properties of the C16-C17 alkyl benzoates, octanoates and maleates of the invention, as compared to C12-C15 alkyl benzoates, octanoates and maleates, include:

- lower freezing points
- better spreading coefficient
- higher viscosity
- higher refractive index
- higher sunscreen solubility

As described on page 2 of the specification, the superior properties of branched monomethyl C16-C17 alcohol-based benzoate, octanoate and maleate esters of the invention, have resulted in superior antiperspirants and sunscreen formulations.

The Examiner's attention is directed to Table III on page 11 of the specification which compares sunscreen solubilities of the branched monomethyl C16-C17 alcohol-based benzoate ester of the invention vs. the sunscreen solubility of Finsolv® TN (C12-C15 Alkyl Benzoate), for various sunscreens. The esters of the invention have markedly improved sunscreen solubilities as compared to Finsolv® TN (C12-C15 Alkyl Benzoate). As set forth on page 12, lines 2-5 of the specification,

the benzoate, octanoate and maleate esters of monomethyl branched C16-C17 alcohols of the invention are more effective in dissolving solid organic sunscreens as compared to commercially available benzoate esters (i.e., Finsolv® TN = C12-C15 Alkyl Benzoate), octanoate esters (Finester EH-25) and maleate esters (Finester LP).

Furthermore, as described in Tables IV and IV-A on pages 12 and 13 of the specification, sunscreen cream formulations A, B, and C made with the benzoate, octanoate and maleate esters of the invention give superior skin feel, emolliency, slip and spreadability as compared to Formulation E, which was made with prior art benzoate esters (i.e., Finsolv TN). The same is true for sunscreen stick formulations (Tables V and V-A on page 14 of the specification), clear sunscreen oils (Tables VI and VI-A on pages 15 and 16 of the specification), and moisturizing hand and body lotions (Tables VII and VII-A on pages 16 and 17 of the specification). The formulations incorporating the benzoate, octanoate and maleate esters of the invention exhibited superior slip, water-rinseoff resistance, stickiness, skin feel and emolliency properties as compared to formulations including known esters, including C12-C15 benzoate esters.

Accordingly, the 35 U.S.C. 103(a) rejection over WO 01/58411 A2 should be withdrawn.

The WO 03/072077 Reference

The Examiner rejected claims 1, 4, 7, 10, 16, 19, 22, and 25 under 35 U.S.C. 103(a) as being unpatentable over WO 03/072077 published 04 Sept. 2003. The Examiner contends the reference teaches homologous compounds (i.e., isostearyl benzoate on page 23) and generically teaches C12-C15 alkyl benzoate being used in cosmetic compositions and as sunscreen agents. The Examiner argues it would have been obvious to one of ordinary skill in the art to prepare the homologous compounds and use them for the same methods as taught by the reference. This rejection is respectfully traversed.

The benzoate esters of monomethyl branched C16-C17 alcohols of the invention have physical properties that are very different and superior to the properties of C12-C15 alkyl benzoate or isostearyl benzoate. The reference merely discloses use of C12-C15 alkyl benzoate or isostearyl

benzoate as a medium of dispersion, but does not teach or suggest the benefits of the esters of the invention. Properties such as lower freezing point, lower viscosity, higher refractive index and higher sunscreen solubility are NOT taught or suggested in the reference. The esters of the invention are clearly different from and superior to the C12-C15 alkyl benzoate or isostearyl benzoate esters of the reference, as demonstrated in the specification and as described above. Accordingly, the 35 U.S.C. 103(a) rejection over WO 03/072077 should be withdrawn.

The CA-113:25693 Reference (Brazilian Patent BR-8903054)

The Examiner rejected claims 2, 5 and 8 under 35 U.S.C. 103(a) as being unpatentable over Brazilian Patent BR 8903054. The Examiner states the reference teaches compounds that are homologous to the claimed compounds and disclose a utility. While the utility is different from that claimed, the claimed compounds would be expected to have the utility disclosed in the prior art unless applicants can demonstrate otherwise. Applicants respectfully traverse this rejection.

The CA-113:25693 Reference (Brazilian Patent BR-8903054) teaches formulated inks for white boards comprising, in part, the esters oxostearyl 2-ethylhexanoate and dioctyl dodecanedioate. As an initial observation, the cited esters have vastly different utility as compared to the esters of the invention, i.e., inks vs. personal care products. As discussed above and as supported by Tables III-VI in the specification, the esters of the invention have unique properties which contribute to their superior utility in antiperspirants and sunscreen formulations. The esters used in inks and in personal care products are not typically substitutable or even related. More importantly, the esters of monomethyl branched C16-C17 alcohols of the invention are totally different from those taught by the reference. The esters of the invention do NOT use straight chain alkyl groups on the alcohol moiety, as does the reference. The monomethyl branched C16-C17 alcohol moiety on which the esters of the invention are based is not remotely taught or suggested in the Brazilian reference. The maleate esters of the invention differ from the esters of the reference as they are diesters of maleic acid and a defined branched alcohol. Accordingly, the 35 U.S.C. 103(a) rejection over CA-113:25693 Reference (Brazilian Patent BR-8903054) should be withdrawn.

U.S. Patent No. 5,840,285 to Fogel

The Examiner rejected claims 3, 6, 9, 12, 15, 18, 21, 24, and 27 under 35 U.S.C. 103(a) as being unpatentable over Fogel. The Examiner states the reference teaches homologous compounds that find use in cosmetic compositions, which is the same as that of the instantly claimed compounds unless applicant can demonstrate to the contrary. Applicants respectfully traverse this rejection.

Fogel claims an emollient composition consisting essentially of the reaction product of fumaric acid and a blend of C12-C15 straight chain alcohols. The fumarates of Fogel are higher melting point fumarates.

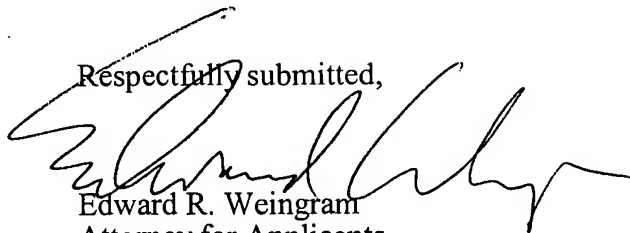
Fogel discloses C12-C15 blended alcohol esters, C16, C18, C20 and C26 alcohol esters of fumaric and maleic acids. The alcohol moieties used in the Fogel reference are clearly different than those of the invention. That is, Fogel does not disclose or suggest use of the defined monomethyl branched C16-C17 alcohols of the invention.

In addition, as discussed above, cosmetic formulations comprising the esters of the invention possess superior properties such as improved fluidity, lower freezing points and low melting points as compared to prior art maleates and certainly as compared to fumarates. These superior properties enable unexpectedly superior formulations for cosmetics, antiperspirants and sunscreen preparations. Accordingly, the 35 U.S.C. 103(a) rejection over Fogel should be withdrawn.

In view of the foregoing Remarks, it is respectfully submitted that this case is in condition for allowance. Favorable action on the merits and allowance of all pending claims 1-27 is respectfully requested.

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Respectfully submitted,



Edward R. Weingram
Attorney for Applicants
Registration No. 24,493
WEINGRAM & ASSOCIATES, P.C.
P.O. Box 927
Maywood, NJ 07607
TEL: (201) 843-6300
FAX: (201) 843-6495